NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET

(pursuant to NAC 445A.236)

Permittee: Washoe County Department of Water Resources
4930 Energy Way
Reno, NV 89502-4106

Permit: NEV2008507

Location: Lemmon Valley Wastewater Reclamation Facility
11000 Lemmon Drive, Reno, NV 89506 (Washoe County)

Latitude: 39° 38' 55"N,
Longitude: 119° 50' 01"W
Township 19N, Range 34E, Section 21

Well Head and Drinking Water Supply Protection: Portions of the Lemmon Lake Playa are within the 6000' Drinking Water Protection Area (DWPA) around five (5) Lemmon Valley Water Company supply wells and around one (1) well owned by the Space ERA Trailer Park. The Lemmon Valley Wastewater Treatment Facility (WWTF) is located within the 6000' but outside the 3000' DWPAs around three of the Lemmon Valley Water Company supply wells and the Space ERA Trailer Park well. The facility is outside any established Well Head Protection Zone.

General: The Lemmon Valley WWTF formerly operated under NPDES permit NV0021539. Correspondence from the U.S. Army Corp of Engineers (11/07/2006, 03/21/2007, and 05/17/2007) has determined that the Swan Lake Basin, including the Lemmon Lake Playa to which the WWTF discharges in periods of low evaporation, is not a jurisdictional water, in accordance with the U.S. Supreme Court decision in SWANCC vs. U.S. Army Corps of Engineers. The determination is related to Section 404 of the Clean Water Act. This establishment removes the requirement for operating under the NPDES permit, thus allowing the NPDES permit to be terminated. Nevada Division of Environmental Protection (NDEP) has determined that the facility is required to obtain a State of Nevada Groundwater Discharge Permit, for which it applied in September 2007. The facility continues to operate under the NPDES permit until the Groundwater Discharge Permit is issued.

The Permittee proposes to continue operating a 300,000 gallon per day (GPD) (30-day average) wastewater treatment plant, serving a customer base of 3,200 residents and light-commercial businesses (e.g., restaurants, taverns, convenience stores) in the Lemmon Valley residential area located approximately 12.5 miles north of downtown Reno, Nevada. Flow into the treatment plant enters the headworks, which consists of a comminutor, grit removal, wet well, and lift station. The flow volume is monitored by tracking the run time on the pump station time clocks. The facility is not outfitted with a composite sampler so all samples are obtained and reported as discrete. From the headworks, influent is pumped into a 25 feet (radius) by 15 feet (depth) circular treatment basin designed with partitioned compartments for aeration, clarification, and sludge digestion. The sludge digestion compartment has been retrofitted to be part of the extended aeration process. On/off blower cycles in the aeration compartment have been implemented to achieve some degree of nitrification/denitrification of the wastewater. Waste activated sludge is periodically discharged to

the newly upgraded evaporation pond no. 2 for further digestion and long-term storage. Non-chlorinated effluent from the clarifier overflow is discharged to evaporation ponds nos. 7-10, connected in series, for further polishing, evaporation, and natural decay of fecal coliform bacteria. The total surface area of the 10 evaporation ponds is 12.8 acres. The facility presently does not use evaporation ponds nos. 1 and 3-6, and they are maintained dry. Several times per year, polished effluent from an outfall in pond no. 9 is discharged into the southern portion of Lemmon Lake. The effluent discharge events to Lemmon Lake are dictated by the seasonal climate (e.g., evaporation), which influences the storage capacity in ponds nos. 7-10. Discharges to Lemmon Lake Playa of up to 1 Million Gallons per Day (MGD) are allowed (Daily Maximum) with a 30-Day Average of 0.65 MGD. Discharges to Lemmon Lake occur when the staff gauge reading in pond no. 9 exceeds a depth reading of 3.0 feet of stored effluent. Discharges to Lemmon Lake Playa are rapidly evaporated, and standing water is not apparent for significant periods of time. The Lemmon Valley Treatment Plant has been in operation since 1971.

Receiving Water Characteristics: Lemmon Lake is a seasonal playa, which contains sufficient water in approximately one-half of the year (e.g., late fall to early spring) to provide habitat for migratory waterfowl such as geese and ducks. Fish are not found in this playa as it evaporates in the warmer months due to low summer precipitation and high surface evaporation rates (e.g., 46"-48" per year). The Nevada State Water Quality Regulations have not classified beneficial uses for Lemmon Lake. The nearby Reno-Stead Wastewater Treatment Plant (Nevada Groundwater Discharge permit #NEV2008500) also discharges a portion of its secondary treated effluent into Lemmon Lake for wildlife habitat maintenance. As stated, the U.S. Army Corps of Engineers has determined that Lemmon Lake is a non-jurisdictional water as related to Section 404 of the Clean Water Act. Conveyance from the evaporation pond to Lemmon Lake shall be posted to alert the public that effluent is conveyed I the vicinity.

Flow: The permittee has applied for a 30-day average influent flow of 0.30 million gallons per day (MGD) and a daily maximum influent flow of 0.33 MGD. Discharges of polished effluent from pond no. 9 into Lemmon Lake will be limited to 0.65 MGD and 2.0 MGD, respectively, for the 30-day average and daily maximum flows.

Proposed Effluent Limitations and Special Conditions: Discharge to the evaporation shall be limited and monitored according to the following Table:

Table 1: Discharge Limitations to Evaporation Ponds (Outfall 001)

PARAMETER		DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
		30 - Day Average	Daily Maximum	Measurement Frequency	Sample Type
Influent	Flow (MGD)	0.30	0.33	Continuous	Pump Station Time Clocks
	BOD_5 (mg/L)	Monitor & Report		Weekly	Discrete
	TSS (mg/L)	Monitor & Report		Weekly	Discrete
Effluent	BOD_5 (mg/L)	30	45	Weekly	Discrete
	TSS (mg/L)	30	45	Weekly	Discrete
	pH (Standard Units)	6.0 to 9.0		Weekly	Discrete
$CBOD_5$ (% Removal)		85	---	Weekly	Calculate
TSS (% Removal)		85	---	Weekly	Calculate

Discharges to the groundwater of the State of Nevada via Lemmon Lake Playa shall be limited and monitored according to the following Table:

Table 2: Discharge Limitations to Lemmon Lake (Outfall 002)[1]

PARAMETER	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	30-Day Average	Daily Maximum	Measurement Frequency [3]	Sample Type
Flow, MGD	0.65	1.0	Daily	Staff Gauge Levels
$CBOD_5$, mg/L	25	35	Twice/Week	Discrete
TSS, mg/L	90		Twice/Week	Discrete
pH, Standard Units	Within 6 to 9.5		Once/Week	Discrete
Fecal Coliform, mpn/100 ml	200	400	Twice/Week	Discrete
Priority Pollutant Metals[2]	Monitor & Report		Once/Term of Permit during a discharge event	Discrete

(1) Table 2 denotes the intermittent discharge of polished effluent from evaporation pond no. 9/10 to the Lemmon Lake Playa for the purpose of water balance management in the evaporation ponds. Monitoring shall be performed according to the schedule of these intermittent discharge events. The permittee shall indicate on the Discharge Monitoring Report (DMR) those weeks for which no discharge to Lemmon Lake occurred to account for non-sampling weeks.

(2) The priority pollutant metals are defined in 40 CFR, Part 423.17, as follows: Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Tl, and Zn. The effluent discharge to Lemmon Lake shall be sampled for metals once during the term of this permit, within one year of the issuance date, and be reported as part of the 4th quarter DMR in the year that the sample was obtained.

(3) During discharges.

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications, which the Administrator may make in approving the schedule of compliance.

a. The Permittee shall achieve compliance with the effluent limitations upon the issuance date of the permit.

b. **By MMM DD, 2008, t**he Permittee shall submit for Division review and approval an updated Operations & Maintenance (O&M) Manual, prepared in accordance with NDEP Guidance Document WTS-2, *Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant.*

Rationale for Permit Requirements: The Division's rationale for the proposed monitoring conditions is as follows:

- *BOD_5:* The BOD_5 of effluent from the activated sludge treatment plant is limited to 30 mg/L and 45 mg/L, respectively, for the 30-day average and daily maximum values, and an 85% removal efficiency, as required for secondary treatment levels (Table 1).

- *CBOD*: The Carbonaceous Biochemical Oxygen Demand (CBOD) of discharges to

Lemmon Lake Playa will be limited to 25 mg/L and 35 mg/L, respectively, for the 30-day average and daily maximum values (Table 2). This limit is in place on the discharge from the polishing ponds to Lemmon Lake Playa because CBOD is an effective surrogate for the 5-day Biochemical Oxygen Demand (BOD_5) for pond systems, in which algal growth

- *TSS*: The Total Suspended Solids (TSS) limit for discharges to Lemmon Lake is set at a combined 30-day average and daily maximum limit of 90 mg/L. This limit has been set because the algae produced in the evaporation ponds from nutrient consumption (e.g., nitrogen and phosphorus) during warmer months are a source of natural biological solids. The Division will require the treatment plant to achieve TSS levels of 30 and 45 mg/l for the 30-day average and daily maximum, respectively, and an 85% removal efficiency, as required for secondary treatment levels.

- *Fecal Coliform*: The secondary standard effluent limits for fecal coliform are 200/100 ml and 400/100 ml, respectively, for the 30-day average and daily maximum values, for discharges of polished effluent to Lemmon Lake.

- *pH*: The Permittee is required to meet the pH limitation of 6 to 9 standard units for discharges of effluent to the evaporation ponds. However, the discharges to Lemmon Lake Playa will have a pH limit of 6.0 to 9.5. Natural algae production in the evaporation ponds increases the pH in the polished effluent by approximately 2.0 units (e.g., from a pH of 7.2 in the plant effluent to 9.2 after algal growth in the ponds). Chemical adjustment of pH or the use of biocides to kill algal growths in the evaporation ponds would be necessary if the polished effluent pH limit could not exceed a pH of 9.0. As indicated, any discharges of polished effluent to Lemmon Lake Playa are rapidly evaporated and are not expected to impact any potential drinking water source.

- *Metals Analysis*: The Division proposes retaining the once per five year monitoring and reporting requirement for heavy metals in discharges of polished effluent to Lemmon Lake. The applicant reports that there are no industrial dischargers into this treatment plant.

- *Groundwater Monitoring*: The Division has not required the Lemmon Valley Treatment Plant to conduct on-site groundwater monitoring. The playa contains natural clay soils with low permeability so that the predominant disposal of effluent is by evaporation in the ponds and over the playa surface. A 1994 Washoe County Department of Water Resources report submitted to the Division stated the increasing nitrate levels in Lemmon Valley domestic wells were primarily due to septic tank leach fields in the area. Washoe County therefore began a program in the 1990's of providing sewer connections to Lemmon Valley homes previously on septic tanks as a means of extending the useful life of the groundwater resources.

Procedures for Public Comment: The Notice of the Division's intent to issue (renew) a permit authorizing the facility to discharge secondary treated effluent into evaporation ponds and the Lemmon Lake Playa subject to the conditions contained within the permit is being sent to the **Reno Gazette-Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. The deadline date at NDEP for receipt of all comments pertaining to

this public notice period is **August 18, 2008, at 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:
The Division has made the tentative determination to issue the Nevada Groundwater Discharge Permit for a period of five (5) years.

Prepared by: Janine O. Hartley
April 2008